LANDS AND FORESTS
TECHNICAL NOTE

NESTING SUCCESS AND PRODUCTIVITY OF BALD EAGLES *(Haliaeetus leucocephalus)* IN NOVA SCOTIA

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INTRODUCTION

Each year for the past three years, nestling bald eagles from Nova Scotia have been donated to the United States as part of a broad-scale program to aid in re-establishing eagle breeding populations within their former northeastern breeding range. Four eaglets were shipped to New Jersey in 1983. In 1984 and 1985, six and eight young eagles respectively were transported to a hack site in mid-central Massachusetts (Austin-Smith and Dickie 1984, 1985). The Nova Scotia Department of Lands and Forests agreed to provide these young birds because of studies which indicated the provincial population was reproductively healthy.

In early 1986 a tentative agreement was reached to donate a further eight eaglets for hacking[1] in Massachusetts. The agreement was dependent upon the present year's production being considered high enough to permit the taking of this number of nestlings for translocation to the United States.

This report, based on aerial surveys, presents an assessment of the 1986 reproductive status of the Nova Scotia bald eagle population.

PROCEDURE

Methodology and terminology are based largely on Postupalsky (1974). Except for 24 mainland nest sites all previously documented bald eagle nests were surveyed using aircraft as were new nests found incidentally during the survey flights. The remaining nest sites were surveyed twice; the first time between 1 and 3 May and again between 31 May and 9 June.

The first flight survey of nest sites determined occupancy and the second recorded nest success and eaglet production. Information from the second survey was used to develop a plan for selecting donor nests. Hughes' 500 helicopters with three person crews were used for the aerial surveys. Most nests were plotted using an air navigational aid (LORAN) which gives the site location as a six digit figure each for latitude and longitude.

FINDINGS

Bald eagle nesting and productivity data for 1986 showed that the breeding population was reproductively sound (Table 1). A total of 260 nest sites were surveyed in 1986 compared to 266 the previous years. One hundred and thirty-five of these sites were occupied (Table 1).

Average clutch size was 1.87 for nests on Cape Breton Island in which entire egg counts were possible (n = 94). Hatching success was 70%.

Total number of active nests was 105 (Table 1) compared to 132 in 1985. Successful nests, i.e. those with at least one young bird in an advanced stage of development, comprised 76% of the active nests. Two of four 1984 donor nests were active in 1986 as were four of eight 1985 donor nests. These latter four nests produced a total of 7 eaglets in 1986.

Between 133 and 137 young eagles were known to have been produced in Nova Scotia in 1986 (Table 1). Average number of young per occupied nest was between 0.99 and 1.01 compared to 1.14 in 1985. This apparent decreased production of young eagles is likely due to the small sample size of mainland nests.

The current year's eaglet production for the Nova Scotia population is greater than at any time in the past for which records are available except for 1985. The eight eaglets involved in the 1986 translocation project represent slightly more than 5% of the 1986 production, the suggested maximum percent of total fledgling production for a donor population. We estimate that an additional 20-25 young were likely produced in nests not surveyed this year.

[1] Hacking is a falconry technique whereby young raptors are placed in a natural nest or on an artificial platform with food until they are free-flying and self-sufficient.

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Table 1 *Bald eagle nesting and productivity in Nova Scotia, 1986.*

	Mainland	Cape Breton	Total
Nest sites surveyed	29[1]	231	260
Occupied nests[2]	17	118	135
Active nests[3]	9	96	105
Successful nests	6	74	80
Pre-fledged young	9	124-128[4]	133-137
Young/occupied nest	0.53	1.05-1.08	0.99-1.01
Young/active nest	1.0	1.29-1.33	1.27-1.30
Young/successful nest	1.5	1.68-1.73	1.66-1.71

1 *Nest sites in Pictou-Antigonish not surveyed.*
2 *Occupied nests - two adults present or evidence of a pair*
3 *Active nest - eggs and/or young present, or adult in incubation posture*
4 *Range of eaglet numbers*